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TECHNICAL SUPPORT 2009

PHENIX WEEKLY PLANNING

3/19/2009

Don Lynch

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Yesterday's Maintenance Access Day – Accomplishments

- Fix the TEC LV if we haven't gotten in; replace transient suppressors?
- Replace the MUID BLT CAMAC power supply
- Try to replace problem 1471N in DC.W
- Check TOF.E power supplies, replace interface card?
- Correct TOF.W HV cabling?
- Replace HBD relay card
- Replace noisiest EMCAL ASIC card (E1?)
- RPC noise problems
- Measurements for RPC Installation
- H2O Bubbler for RPC

Next Maintenance Access Day – April 1 (No Fooling)

'09 Technical Support

Run Support & Other Ongoing Work

Run Technical Support (mech, elec., gas)

As needed → always takes priority

RPC Factory Support (continuing)

(see slides later)

Prep for 2009 Shutdown

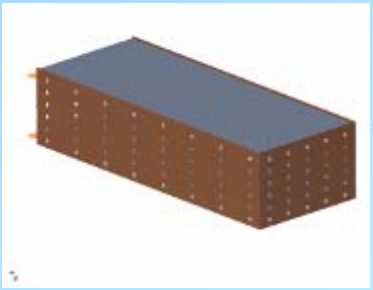
Design PC1 East maintenance support fixtures
design 3/31, fabrication 5/31
MMS Scaffolding Design
design Done, ordering/fabrication 5/1
RPC3 North installation Prep
Installation plan (including inst'n site prep plan)
RPC Quarterly Review 3/12 & 3/13
Installation fixture design 4/3
Installation fixture fabrication 6/26

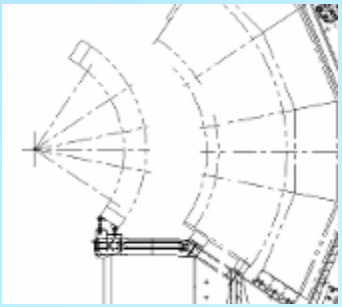
Upgrades Support

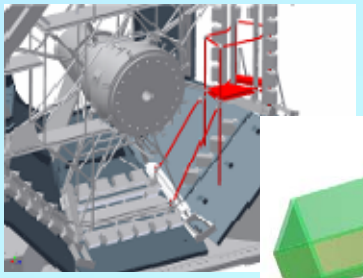
New Beampipe supports (back logged)
NCC prototype design support (on-going)
VTX fabrication tooling design (on-going)
VTX installation design (on-going)
FVTX design/eng'g support (no support req'd yet)

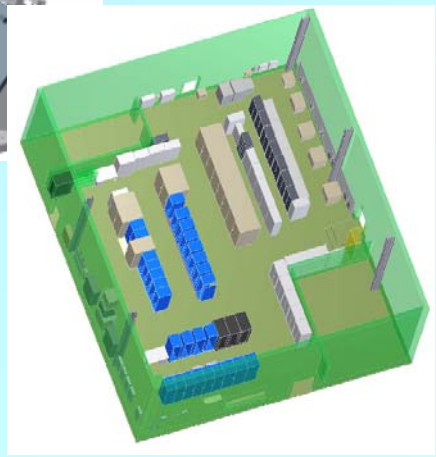
Maintenance & Overhead Tasks

Procedure Review/Updates (ongoing)
Rack Room, AH, Trailer, Mixing House, etc. (ongoing)









PC1 East Repair Fixturing Design

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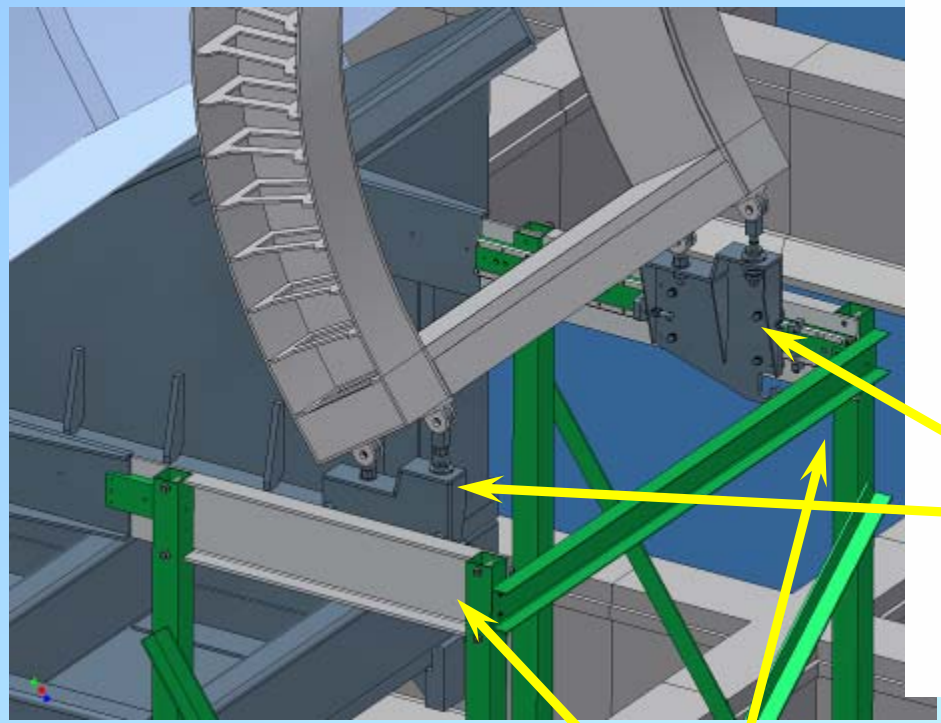
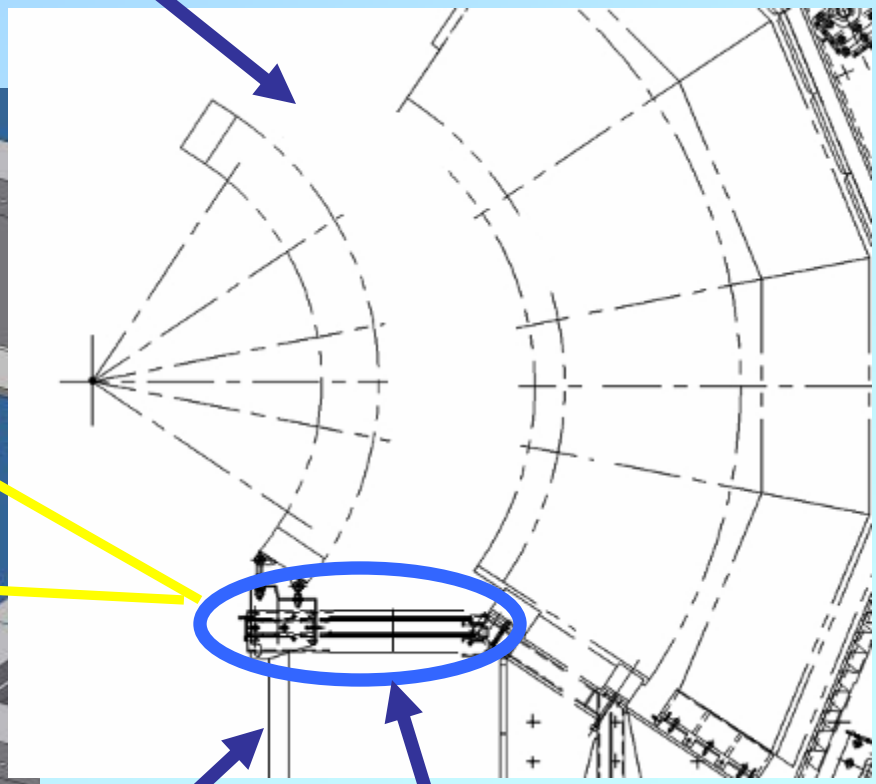
Repairs to be performed during '09 Shutdown

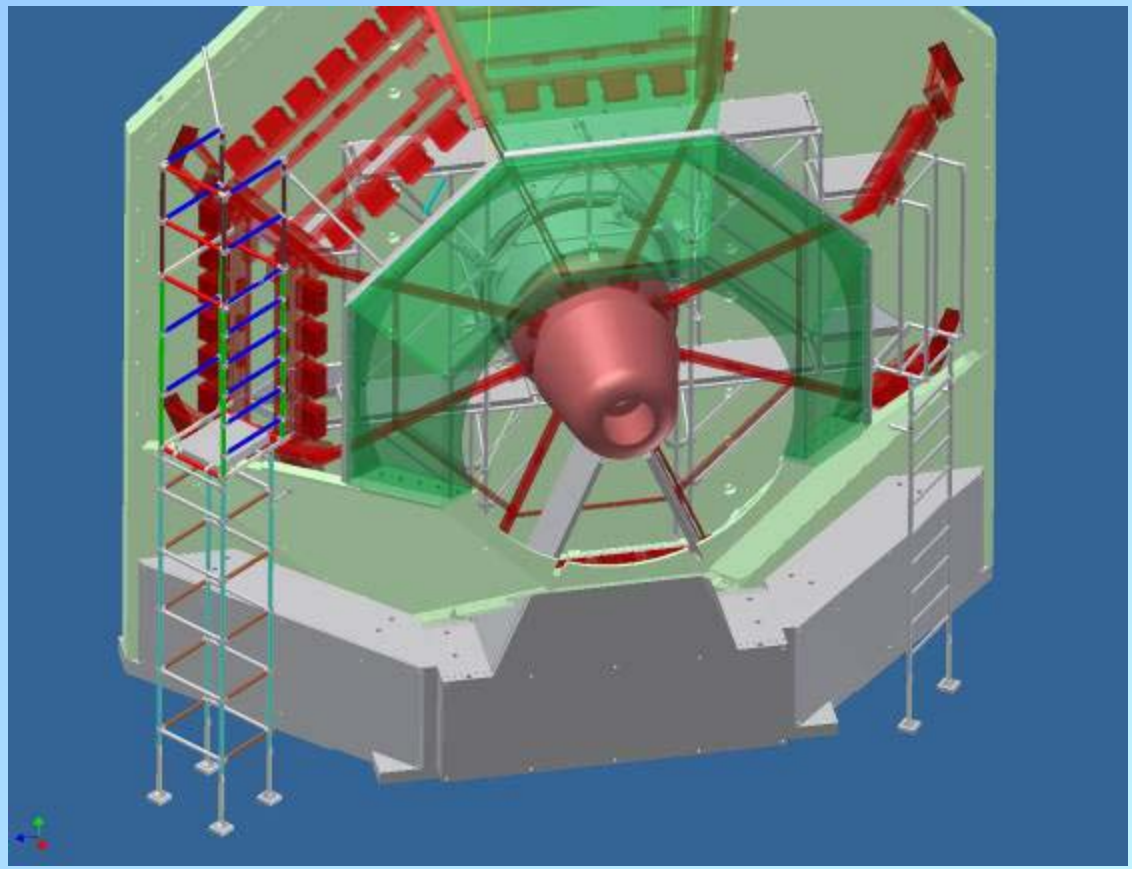
Access to PC1 is adequate to remove and replace module





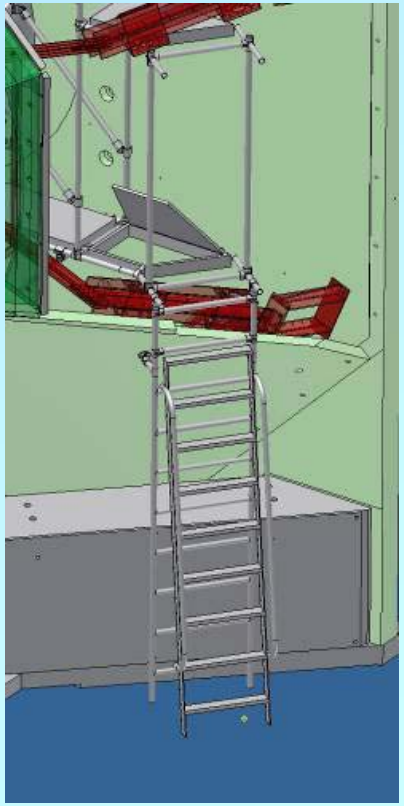
New Column Supports Under railway extensions

New Railway extensions will allow DC to be pulled out ~ 3 feet more



MMS scaffolding

Designed for MuTr installation. Approved in 2000 for use. Stress analysis done for worst case. Current design has minor modifications.



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RPC Factory Support Tasks:

- Complete the Dark Current Test Stand (Done)
- Order materials for Burn-in Test Stand (Done, review tomorrow)
- Complete design of Tilting Transport Table (Done Review tomorrow)
- Order materials for the Tilting Transport Table (Done)
- Order additional shelf units for gap, module and RPCstructural component storage (Done, assembled)
- Design and order environmental control system for Burn-In Test Stand (3/27)
- Assemble gap & module storage with humidity control
  All 8 shelves assembled, 1st humidity control unit received.
- Assemble structural component storage
  existing shelves (Done)
- Assemble tilting transport table In progress 3/27
- Assemble burn-in test stand (bike rack) 4/10
- Extend gas, electric and safety systems to Burn-In Test Stand (4/10)

RPC Factory

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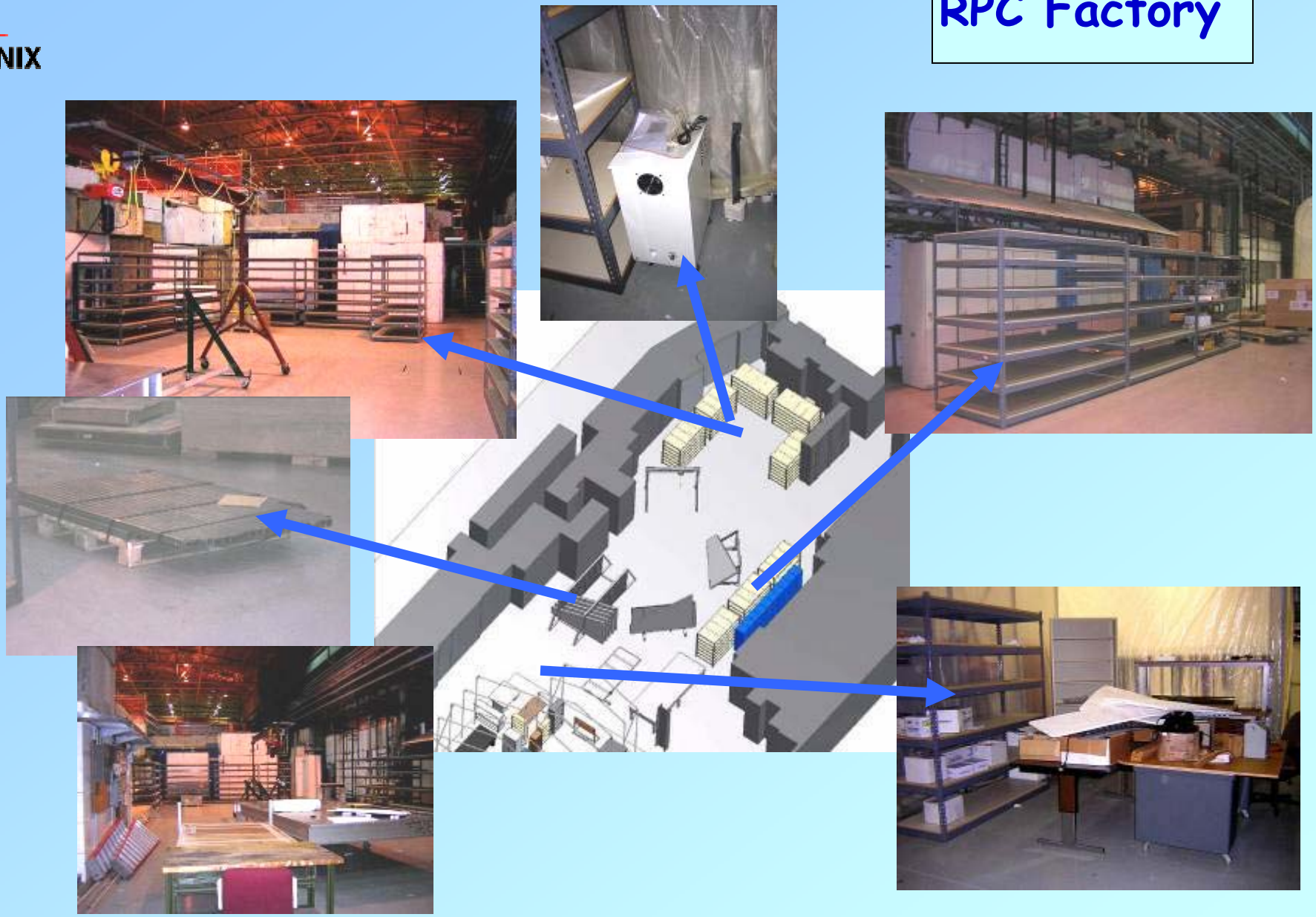

RPC Factory

Dark Current Test Stand under construction

Safety cushioning on edges

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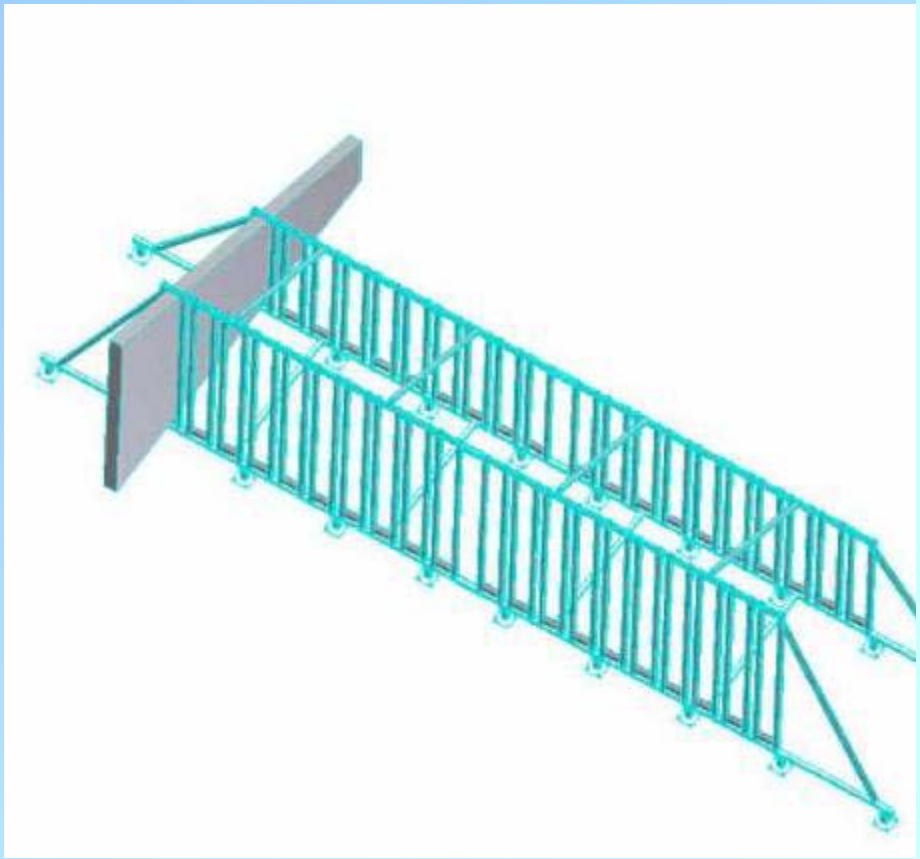
RPC Factory Tilting Transport Table ("TTT") For Octant Assembly and Transport within the RPC Factory

Mechanical Requirements:

- Horizontal Table large enough for half octant
- Hinged table top support near center of gravity to allow rotation of table top 90 degress to vertical position
- Table structural integrity sufficient to support full weight of table and half octant
- Integrated rollers to allow transfer of half octant from table to burn-in test stand (BITS) and back
- Roller heights to match roller heights on burn-in test stand
- Roller positions to allow full control of half octant angular orientation as Cg passes each roller in the TTT and the BITS.

RPC Factory Burn In Test Station
For Octant and Half Octant Burn-in Tests



Mechanical Requirements:

- Slots for 20 detector units, max. 10 under test and 10 storage
- Each detector weighs ~ 750 lb
- Each slot to have 2 rollers
- Separation between rollers spaced to allow half octant to rest in slot with unit center of gravity mid way between rollers
- Rollers must be sufficiently close to catch unit before center of gravity passes first roller

New Beampipe

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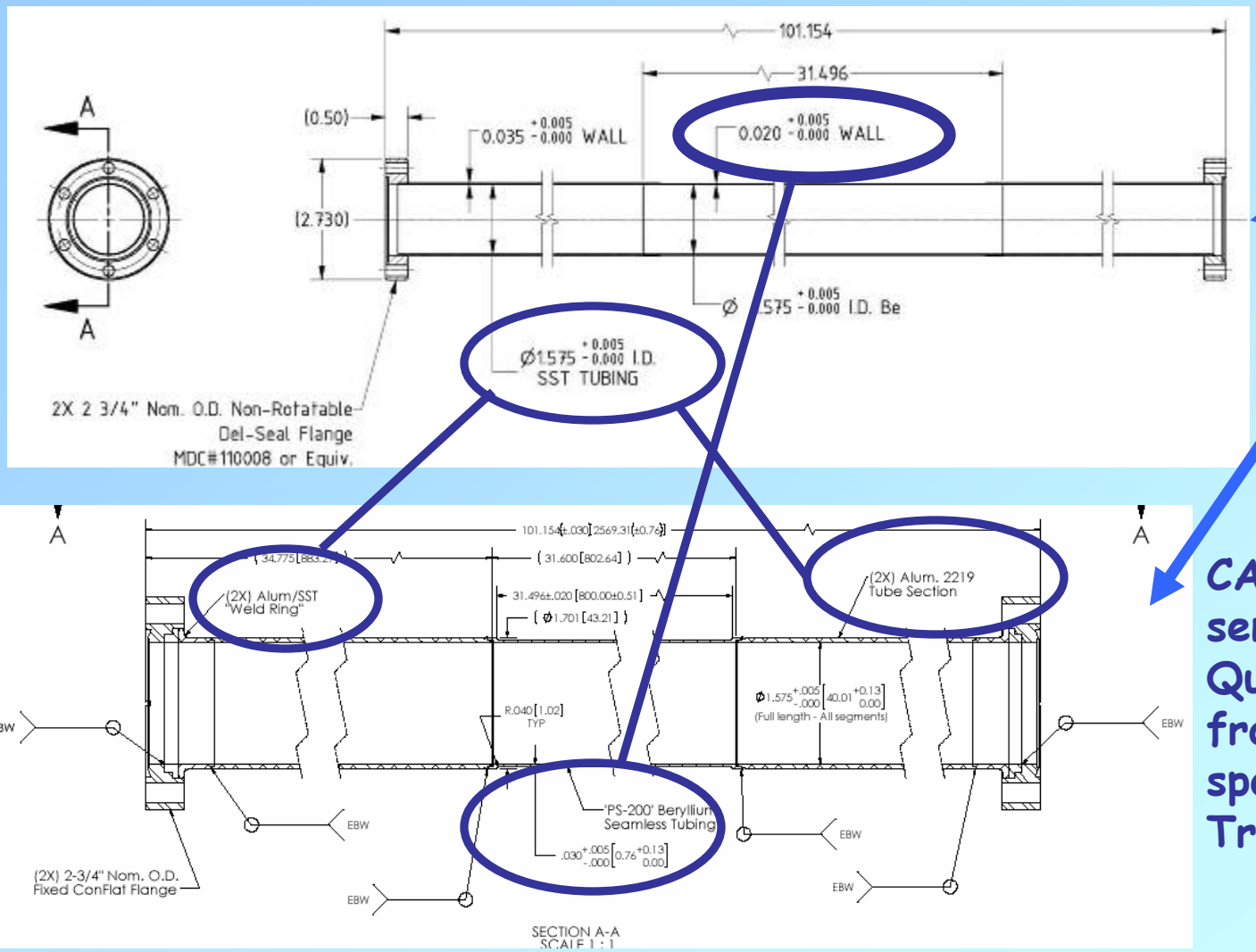

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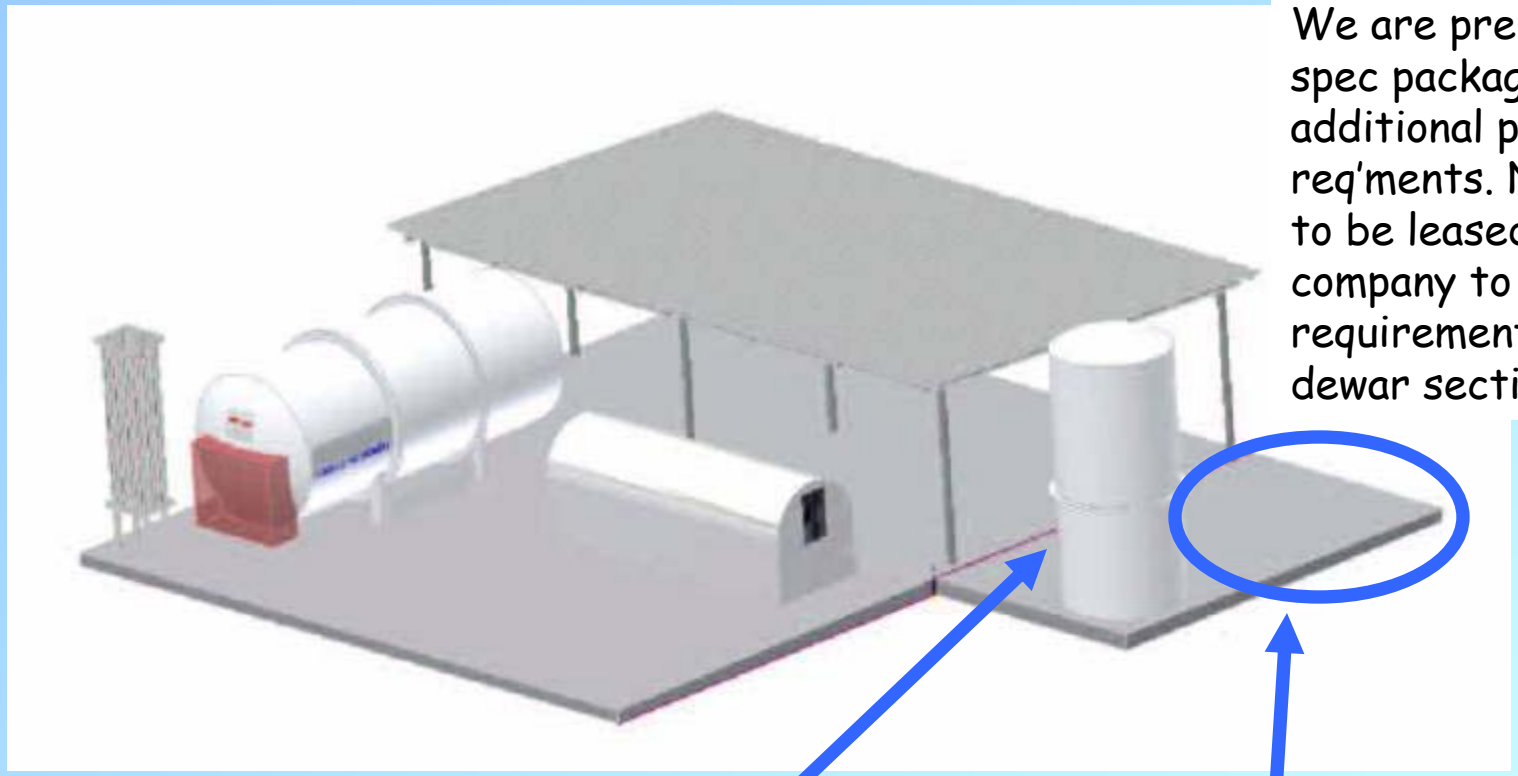
SCD

Brush-Wellman CAP

CAP Approval sent to B/W. Quotes rec'd from CS for spools & Transitions

Gas Pad Upgrade & Ar Dewar



We are preparing a spec package for the additional pad req'ments. New dewar to be leased; supply company to provide requirements for dewar section of pad.

New Liquid Argon Dewar to meet current and future demand

Additional Pad area for storage of empty gas bottles

General location as shown, footprint (size) TBD

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2009 Building Maintenance Issues

These items passed on to Fred K.

- Mixing House thermometers not working properly
- Roof leaks in utility bathroom at northwest corner behind tech offices and over door between rack room and assembly hall.

- Trailer bathroom slop sink (for Custodians).
- Heat wrap tape for trailer bathroom toilet drains to preven freeze/clogging in winter.
- Improved Rack Room AC performance (This item has been addressed time and again but unsatisfactorily. Currently the AC fails periodically and is repaired only to fail again. On-condition maintenance is not adequate…an engineered solution is needed.)
- Back bathroom plumbing noise
- AH slop sink leak
- Icy conditions at mixing house north stairs

Shutdown '09 Major tasks (expect 5 month shutdown):

- 2009 shutdown Begins June 28
- End run, remove wall, MuID collars down, EC to AH (3 weeks)
- Install Station 1 South scaffolding (1 week)
- Install Station 2/3 scaffolding (2 weeks)
- PC1 East repair (4 weeks)
- Install stations 1, 2 and 3 south MuTrigger FEE's (12 weeks)
- MuTr decapacitations: station 3 south (3 weeks)
- RPC Station 3 North (see next slide)
- Mechanical/Electrical Plumbing installation of (4) new DCM racks
- Add Ar Dewar and expand gas pad to add storage (12 weeks)
- Prep for future upgrades/existing equipment maintenance & Repair (as necessary)

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RPC3 North Installation Schedule

Installation Concept Finalized	Mar. 31
Half-Octant Brackets, Connecting Blocks, under detector translating support design	Mar. 31
Installation Fixturing and Tooling Design	Apr. 30
Redesign crystal palace/IR Gas Barrier	May 29
End of Run 9	June 28
Fixturing/Tooling, Brackets/Block/support Fabrication	June 30
Move Shielding/Remove Crystal Palace	June 29-July31
Move cable trays and piping in gap 5	June 29-July 31
Simulated (practice) installation with new fixturing/ tooling	July 13-July 31
Install, level & survey support structure	Aug. 3 - Aug 14
Half Octant Testing and Assembly Complete (1^{st} half Octant ready by Aug.17, 16^{th} by Sep.18)	Aug. 17- Sep. 18
Mechanical Install Align & survey RPC3 N	Aug 17 – Sep. 30
Install 3 elect. Racks, all cables & gas system	Oct. 1 – Oct. 30
Commissioning	Nov. 1 – Nov. 30
Install new crystal palace/IR Gas Barrier & Shielding	Nov. 1 – Nov. 30
Start Run 10	Dec. 1

Safety, Security, etc.

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1. Engineering Analyses reviews Tomorrow:
   - **RPC Factory Burn-in Test Stand**
   - **RPC Factory Tilting Transport Table**
   - **MMS Scaffolding**
   - **PC1 Repair Fixturing**

2. Training Update
   - Mostly up to date
   - A few need to get LOTO (web) up to date and CPR (classroom)
   - Most of us need elect safety 1 in the next few weeks (web)

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Where To Find PHENIX Engineering Info

Spring begins tomorrow morning at 11:44

"Vernal Equinox"

Get out your bathing suits, summer can't be far behind!

Useless trivia: Equinox translated literally means "equal night"

Links for the weekly planning meeting slides, archives of past meeting slides,long term planning, pictures, videos and other technical info can be found on the PHENIX Engineering web site:

http://www.phenix.bnl.gov/WWW/INTEGRATION/ME&Integration/DRL_SSint-page.htm